STFC Challenge Led Applied Systems Programme (CLASP) Guidance Notes

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INTRODUCTION

CLASP

STFC runs a Challenge Led Applied Systems Programme (CLASP) to support the application and commercialisation of STFC research in four key global research challenge areas; Energy, Environment, Healthcare, and Security. Each call will be directed towards two of these challenge areas which will rotate biennially.

CLASP is intended to support the de-risking of R&D processes for industry through the development of technology demonstrators and industry-ready prototype systems (moving STFC research outputs from TRL 3 approximately). The brief for the projects is left open to allow projects to request the timescale and resources they feel is necessary for the work. The total budget of the scheme per annum is in the region of £2M and it is expected that this will fund a small number of projects ranging from short feasibility studies to larger developmental projects against key milestones.

Applications should aim to address market needs by working closely with the end users, with support/collaboration from appropriate industrial partners to ensure route to market. It is recommended that applicants seek letters of support from any relevant parties to show their support. Although this is not mandatory for the scheme, this is highly encouraged and will significantly strengthen applications. Furthermore, applications should also consider data ownership, ensure ethical innovation practises and appropriate regulatory pathways where appropriate. Applicants are encouraged to read the research grants handbook for details on STFC grants, as well as terms and conditions.

CLASP 2020: Security and Environment

For the CLASP 2020 call, the key challenge areas have been identified as Security and Environment. Applications are invited to be submitted to address a specific challenge within one (or both) of these themes. The remit of these themes is broad and can include any relevant area such as, but not limited to:
Please note, a proposal submitted to CLASP does not have to align with these examples, and applications in other security and environment sectors will be accepted.

**ELIGIBILITY**

Proposals for projects must clearly demonstrate that the science, technology and expertise involved originated from the STFC core Science Programme (Nuclear Physics, Particle Physics, Astronomy, Space Science, Accelerator Physics, or computing in support of these), or the STFC facilities and laboratories, CERN, ESO or ESRF.

**Lead Applicants**

Lead applicants need to demonstrate that the project idea is linked to STFC research. As such, CLASP is normally only open to current or past STFC grant-holders (core research grants, or studentships only) who meet the eligibility criteria defined in the Research Grants Handbook. If an applicant has received STFC funding, but not in his/her name (for example through a post-doc position) then they are still eligible to apply for the CLASP scheme, provided they are attached to an eligible RO and can show they will remain under contract for the length of the grant. If this is the case, please contact the office with a grant reference number(s) so we can confirm eligibility. Industrial applicants are not permitted to be lead applicants, and should be listed as project partners.

STFC employees working at one of the national laboratories are fully eligible to apply, however must demonstrate the clear transfer of technology to commercialisation.

**Lead Research Organisation**

The RO must be eligible to hold UKRI grants; i.e. be an approved UK Higher Education Institution (HEI), Research Council Institute (RCI) or Independent Research Organisation (IRO) eligible for UKRI funding. Full details of approved RCIs and IROs can be found on the UKRI website. For further information applicants should refer to the STFC Research Grants Handbook.
Non-Academic Organisations

Given that CLASP is designed to transfer STFC research and technology to help solve a specific challenge, the lead applicant should be from an eligible academic institution. Non-academic organisations may apply for CLASP funding as part of a joint proposal, as long as they are eligible to hold UKRI grants. Please see the webpage for a full list of current institutions.

Organisations not eligible to hold UKRI grants, such as industrial organisations, research/training organisations and not-for-profit operations, must apply in collaboration with a lead academic partner and demonstrate that they possess the relevant technical capabilities and capacity to meet the scheme’s objectives. These collaborators are expected to be Project Partners – donating funds or aid in kind to a project. Furthermore, as this scheme is UK funded, the organisation must have a strong presence and benefit the UK economy. The industrial supporter may be based outside the UK but the expected value added to the UK economy, both within the project timescale, and as a result of the work completed, will play an important part in the assessment of the worth of the project. The greater the value to the UK the more highly rated the project will be at the time of assessment for funding.

Applications will be assessed by the STFC External Innovations office staff for eligibility following submission and can be rejected at this early stage if not fulfilling the requirements of the scheme. These will be viewed as an office return, not as a panel rejection, and if submitted with revisions will be treated as a first submission in subsequent calls.

APPLICATION PROCESS

The CLASP application is a two-stage process. Applicants are invited to submit an initial Expression of Interest (EOI) application, which will be assessed by the CLASP panel for technical feasibility, impact, and cost effectiveness. Please note, the EOI application is not sent to peer review.

Shortlisted applicants will then be invited to develop full proposals with available assistance and advice from STFC External Innovations staff and CLASP panel members if they wish. At this stage, applications will be sent for external peer review, followed by invited PI response. Applicants may be invited to present their final proposals directly to the CLASP Panel, followed by a short question and answer session. All proposals will then be assessed by the panel, and a final ranking list produced. All applications must be submitted using Je-S (Joint Electronic Submission) for both the EOI stage and the full stage. Further details on the application process can be found below. Applicants should be aware that submitting a proposal in Je-S sends the application to the Universities Research Office, not UKRI. Please allow enough time before the deadline to allow the proposal to process through the Universities internal submitter pool. Please see the call webpage for more details.

TIMETABLE

The call will open following the for EOI applications on 6th November. Successful applicants will then be invited to submit a full application. The call opening and closing dates can be found on the call webpage, and other key dates will be circulated amongst eligible applicants shortly after the EOI call closes. Applicants should be aware that submitting a proposal in Je-S sends the application to the Universities Research Office, not UKRI. Please allow enough time before the deadline to allow the proposal to process through the Universities internal submitter pool. Please see the call webpage for more details on UKRI/STFC deadlines including the closing date and latest time for receipt of proposals. Proposals submitted after these deadlines will not be accepted.
STAGE 1: EOI

Only the lead PI can submit an EOI application, which should consist of the following documents:

- Je-S pro forma
- Two page case for support (Mandatory)
- Project Partner Letter of Support (Recommended, if relevant)
- Letter(s) of Support from users/other interested parties (Recommended)*
- Other (Optional. Please note, any document uploaded under “other” will not be seen by external reviewers or the panel)

*Please note, only one letter of support is allowed to be submitted in Je-S. If you wish to submit more than one, please merge them together into a single file.

Joint applications are allowed into the CLASP scheme, provided both leading organisations are eligible to hold UKRI grants (please see above for more details). Any industrial collaborators should be listed as project partners, and should not submit as a joint proposal. Please note, only the PI should submit the EOI application. A full application (stage 2) should be later submitted by all parties requesting funding, if invited.

EOI Case for Support

Applicants are encouraged to consider the final scoring criteria, but will not be expected to meet them in full at this time.

The case for support should be max 2 pages, and conform to the standard UKRI format (font Arial size 11, with a minimum of 2 cm margins around each page). The documents should contain sufficient detail to allow the panel to make an informed decision over whether the application is strong enough to be invited for a full submission. The case for support should include:

- **Technical Outline** - explain the technical background of the project, its link with STFC funded research, and the degree of novelty and/or improvement over current technologies or processes

- **Impact on the challenge area** - describe the ultimate goal of the project and detail the way in which development of this technology will address the sectorial challenge(s) identified. This should include evidence of the route to implementation, the commercial potential of the idea, and potential exploitable outputs from your project. You should:
  - Explain how this project addresses a clear operational and/or business opportunity, and the size of the market opportunity.
  - Describe the market potential estimated on the basis of potential beneficiaries. This can be a niche or global market.
  - Describe the economic and societal impacts that the project is expected to deliver to those inside and outside of the consortium and over what timescale.
  - Outline the route or potential route to exploitation of outcomes post project completion, including further development and financing requirements.

- **Timescale and Outline work plan** - briefly describe the time scale of the project, and what steps will be taken to develop the technology over its course. Include the justification for any collaborations and project partners who will also be involved
• **Estimated costs** – provide the estimated cost of the project, a breakdown of how they will be used, and any contribution from project partners. Any capital requests should also be stated here. Please note, these costings are not final and can change when a full stage application is made. These costs should be updated for the full submission.

**STAGE 2: Full application**

Following the EOI stage, successful applicants will be invited to submit a full proposal though Je-S. This application should consist of:

- **Je-S pro forma**
- Six page case for support (Mandatory)
- One page Gantt chart (Mandatory)
- One page data management plan (Mandatory)
- Two page knowledge exchange plan (Mandatory)
- Letter of Support from Technology Transfer Office (Mandatory)
- Letter of Support from each Project Partner (Mandatory, if relevant)
- Letter(s) of Support from any interested organisations/potential users (Recommended)
- Covering Letter (Optional. Please note, cover letters will not been seen by external reviewers/the panel)
- Other (Optional. Please note, any document uploaded under “other” will not be seen by external reviewers or the panel)

All documents should conform to the guidelines described in the Je-S help text. Any additional documents such as CVs, extra results, pathways to impact statements, list of publications etc. will not sent for review.

If this is a joint proposal where funds will be held by more than one institution, the PI from each institution must submit a separate Je-S application with a common title and Case for Support. Only the lead application should submit the Gantt chart, Data Management Plan and any letters of support. See Je-S Help text for setting up joint proposals.

**Full application Case for Support**

The case for support should be no longer than six pages and conform to the font and margin guidelines in the Je-S help text. It is the responsibility of the principal applicant to ensure that information is worded in such a way as to protect commercial, confidential, or sensitive data. STFC will assume that the applicant has obtained necessary permissions from any party that may be involved in the application. The six page Case of Support must include information under the following headings. Applications WILL BE REJECTED by the office for non-compliance with these directions.

- **Background and Aim**
  What is the STFC funded research that will form the basis of this project? What knowledge exchange has taken place between the applicants and industry/policy makers/any other relevant users (if any)?
  What is the aim of this application? Who will benefit from this project and subsequent commercialisation?

- **Technical Summary**
  Provide a detailed account of the current status of the technology you are proposing and the plan...
for development. This should include justification of why you and are best placed to carry out the work. The novelty of the proposal and/or the expected improvement over current technologies or process relevant to a challenge.

- Business Plan
Where possible, this should include a description of the target market, route to market, expected customers and projected sales. Describe the competitors in the market and how the proposed technology would offer a commercial advantage. Describe the predicted investment and mechanism required post-project to complete commercialisation, where possible. Please note, a separate 2 page business case should be submitted alongside the case for support (see below for details).

- Work Plan and Risk Analysis
Detail specific work packages, assigning responsibility between partners (if required). Applicants should show that they have identified risks and developed alternative strategies to mitigate these. Applicants should consider both technical, programmatic and, where relevant, commercial risks.

- Resources
State the resources requested by the applicants and if relevant, the project partner, and provide justification for them. The CLASP Panel may reduce resource requests if they feel there is insufficient justification.

- Project Deliverables
Identify what the direct outputs will be at the end of this grant (please be specific).

- Software development plan (if applicable)
Where the proposal includes software development, a plan should be submitted with detail relative to the significance of the software development in the project, see Annex 2.

Knowledge exchange plan

A 2 page business plan should be submitted alongside the case for support. In Je-S, this should be attached as “Knowledge exchange plans,” and should contain information on:

- Freedom to operate
Provide evidence that you have freedom to operate (e.g. a summary of the results from patent searches), identification of any IP and detail how it will be protected. Please note, a summary of the IP position should be further detailed in the Letter of Support from your Technology Transfer Office.

- Market research
Applicants should describe the size of the market opportunities which may open up as a result of this project. This should include details on; the current nature, size, and growth of the market, and the predicted market share taken by the outcomes of the project. Applicants are encouraged to seek advice from the Research Office and/or Technology Transfer Office for advice on market research.

- Competitor analysis
Applicants should provide the details of any competitor technology, or alternate solution to the same problem. This should include; name/location/size of the company, the name of the product/service and its cost, along with any strengths and weaknesses, and explain how the project will offer improvement
• Route to market
Applicants should list any exploitative outputs from the product (e.g. what are you going to sell, what the projected sales are and who identify target customers, what the profile of the customers is (size, geographic location) what the estimated Bill of Materials (BoM) is for the product and what percentage is this likely to be of the selling price).
Provide evidence for your statements about the target market of any product developed based on the potential beneficiaries, and outline your strategy for developing market share and why you have chosen this market method, i.e. what is the proposed channel to market and what are the key barriers to allow entry to the market and how will they be overcome.

Describe the predicted investment and mechanism required post-project to complete commercialisation or successfully apply the technology into real practice, e.g. policy, regulation, improvement of existing process, etc. Explain what the estimated costs are and timescale to have a product ready. Details on any regulatory requirements should be included.

For disruptive products/services, details on the route to market, the market size, and how the project will seek to explore the market potential should be provided.

Letters of Support

Project partners
Letters (or e-mails) of support must be included from all named partners. In addition you can include letters of support from other relevant parties not directly involved in the project but who support the objectives, for example, potential end users. Letters should:
• Be dated within 6 months of the submission
• Be no more than two sides of A4 in length
• Detail their interest and involvement in the project in terms of specific objectives and desired outcomes together
• Detail the projected market size, customers, and sales
• Describe how the company will commercialise the technology beyond the project
• Detail specific contributions to the project (either cash or in kind) with a justifiable monetary value.
These contributions should be also be stated in the Case for Support.

More information on project partners and letters of support can be found in the research grants handbook.

Technology Transfer Office
A letter of support from an applicant’s Technology Transfer Office (or equivalent) must be included with each CLASP application. It should relate specifically to the proposal (i.e. should not be a generic letter of support) and explain in detail how the university sees the project being taken forward and how the university intends to support the work involved. It should also outline the current and anticipated IP position (has a patent been filed / granted) of any involved parties.

Please note, Je-S only allows a max of 3 letters of support to be uploaded, and so letters of support may be merged together into a single document if needed.

Data Management Plan
It is anticipated that all applications will produce or collect data during the course of the proposed project. The development of a data management plan as an attachment to the JeS pro forma is mandatory for all CLASP applications. The plan should be no longer than two pages of A4. The plan,
Together with any costs associated with it, will be considered and assessed by the normal peer review process. The data management plan should explain how the data will be managed over the lifetime of the project and, where appropriate, preserved for future re-use. Applications that do not have a data management plan will not be accepted. Please see the research grants handbook for more information.

**Collaboration Agreements**

If a CLASP project includes more than one organisation (either academic, industry, or eligible research organisation), then a signed collaboration agreement between all named partners must submitted to the STFC office before the project start date. This should include details of how IP will be managed. Grants will not be allowed to start until the agreement is seen by the office.

Example model research collaboration agreements that may be used as a basis for specific agreements between partners have been developed through the Lambert toolkit for collaborative research.

**Data Protection**

Grants submitted via Je-S are done so under their terms and conditions. Please make sure you have permission from any relevant bodies before submitting any sensitive data. STFC will not be held accountable if data submitted has been done so without the relevant permissions sought.

**Ethical considerations**

Projects that involve holding sensitive information on individuals (for example facial recognition etc.) should ensure they conform to UKRI’s research integrity policy. Although an ethical statement will not need to be submitted alongside any proposals, all the involved researchers should have a consideration of such requirements. STFC reserves the right to suspend any grants that do not meet these requirements.

**ASSESSMENT**

**Panel assessment**

Both the EOI and full-stage CLASP applications are assessed by an independent panel, consisting of standing members and invited experts to the specific themes of the call, from both academia and industry. For this call, there will be representation from both the Home Office and DEFRA on the panel.

**Standing CLASP Panel:**

Jim Wharfe – Independent environment consultant (Chair)
Giles Hammond – University of Glasgow
Harry Barraza – LGC Group
Peter Jarritt – NHIR Brain Injury Healthcare Technology Cooperative
Peter Huggard – STFC RAL Space
John Allen – Elekta Ltd.
Mark Bray – BAE Systems
Richard Bates – University of Glasgow
Robert Thompson – Heriot-Watt University
Claire Jones – AWE Ltd.
Dhiren Kataria – University College London
Confidentiality and Peer Review

STFC takes all reasonable steps to ensure that the contents of applications submitted to CLASP are treated as confidential. All members of the Panel sign a non-disclosure agreement and peer reviewers must comply with the Research Councils Reviewer Protocols – details can be found on Je-S. Reviewers and Panel members are asked to declare conflicts of interest in relation to an application before they are asked to assess.

EOI assessment

Following the EOI submission deadline and eligibility checks, all applications are sent directly to the panel and do not undergo peer review. The panel will then decide which applications should be invited to make a full submission, and which should be rejected.

Full stage assessment

Invited applicants will be assigned a panel member to assist in the preparation of a full proposal. Following the submission deadline, full stage applications will be sent to external peer review, and then by the panel. During this second panel meeting, applicants may be invited to present a brief talk on their project, followed by questions from the panel.

Each proposal will be assessed by external reviewers, one of whom must be nominated by the applicant. The applicant’s nominated reviewer should not be a current or previous collaborator, a personal friend or family member, neither should they be from the applicant’s or collaborator’s home institution. Should it arise the reviewer is in violation of this, the nominated reviewer will not be invited to review. Applicants should use Je-S to indicate their suggested reviewer.

Criteria for Assessment

Proposals must demonstrate that they draw on an area of expertise supported by the STFC core science programme (astronomy & space science, particle physics & particle astrophysics, nuclear physics and the computing and accelerator programmes supporting these) or STFC’s staff in laboratories and facilities.

Proposals will be assessed under the following criteria in the panel meeting:

Scientific and technical merit

- Scientific quality (current technology status, objectives and deliverables)
- Technical feasibility
- Risk management
- Novelty with regard to any existing technology
- Suitability of applicants and partners (outline who is doing what)
- Strategic fit to call

Economic Impact

- Likelihood of commercialisation and route to market;
- Economic benefit, both UK and globally, including cost savings;
- Business plan (e.g. need, size, competitors, value, and location)
• IP Management plan

Societal Impact
• Societal benefit
• Dissemination plan, including educational benefits
• Influence on policy making
• Capacity building

Added value
• Added value of CLASP funding (what would happen if this was not funded)
• User engagement
• Value for money (justification of costs)

If the proposal is from CERN, ESO, or the ESRF, then the extent to which the proposed knowledge exchange collaboration will enable CERN, ESO or ESRF technology to be exploited by UK industry or non-STFC academic sectors will be considered.

Response to reviewers
Each applicant has the opportunity to respond to the reviewers comments before the panel meeting. Applicants should be aware that we will request your response to reviewer approximately 5-7 weeks following the closing date of the call. All key dates (including an estimated date for this response) will be contacted to any eligible applicants following submission.

The PI Response should be no more than half a page of A4 per reviewer (MAX 2 pages), submitted in Arial font size 11. This should be submitted within 5 working days of receipt.

SUCCESSFUL APPLICATIONS

Please note, a collaboration agreement between all collaborators must be sent to the STFC office, including details on the ownership of any IP, before funding can start. Failure to do so will mean the grant cannot become active. For further details please see the research grants handbook section 7.2 and 7.4.

Grants are awarded under the terms and conditions of UKRI. Please see UKRI privacy note for more details

RESEARCHFISH

All award holders are required to submit any outputs from their CLASP project on the Researchfish platform. Award holders are required to provide information about outputs arising from their work annually during the award period, and for at least 5 years after the award has terminated. The CLASP Panel will monitor outputs on all CLASP grants.

CONTACTS

We encourage potential applicants to contact the office to discuss their proposal, and the STFC office will be able to help and provide advice on applications where appropriate. Please contact the Programme Manager Helen Randell-Sly (helen.randell-sly@stfc.ukri.org) or assistant programme
manager, Ed Mansfield (edward.mansfield@stfc.ukri.org) with any queries.

**USEFUL LINKS**

Below is a list of links which applicants may find useful when applying for STFC grants:

- [Peer review framework](#)
- [Researchfish](#)
- [Equality of opportunity](#)
- [Unconscious Bias](#)
- [JeS Handbook](#)
- [STFC Grants Handbook](#)
- [UKRI Terms and Conditions](#)
- [UKRI ethical Innovations practises](#)
ANNEX 1: CERN, ESO OR ESRF SCIENTISTS AND ENGINEERS

Any applications made by applicants working at international facilities should note that the project outputs must benefit the UK economy.

CLASP applicants from CERN, ESO or ESRF are welcome, and should be from a scientist or engineer performing one of the following functions:

- Research, development, or professional work including academic study and/or supervisory responsibility
- Leadership of research, development, or professional work involving a wide range of academic study and/or strategic responsibility
- Responsibilities of the highest level of scientific and/or management complexity, originality and wide distinction

All applicants from CERN, ESO or ESRF should provide a cover letter along with their proposal stating confirmation that they meet the eligibility criteria as set down above. Furthermore, the applicant’s contract of employment with must cover for at least length of the grant. The Principal Investigator need not be a UK citizen.

Completed research proposals must be approved by the appropriate Head of Department or equivalent at the host organisation. Applications from CERN should be submitted through the Director of Technology Transfer and Scientific Computing. Applications from ESO through the Head of Administration.

Please note:

- The collaborating organisation must have its research or manufacturing base in the UK.
- Funds requested should be given in pounds sterling only
- Estates and indirect costs will not be applicable to CLASP grants awarded to CERN, ESO or ESRF. The estates and indirect costs addition is covered in the STFC subscription payment to CERN, ESO or ESRF, and so (if the grant is awarded), STFC will pay 80% of the full excluding estates and indirect costs.

Successful CLASP awards to CERN, ESO, and ESRF will be subject to the standard terms and conditions of STFC awards, although additional grant conditions might be required on individual grants.
ANNEX 2: SOFTWARE DEVELOPMENT PLAN GUIDELINES

Over the last 5-10 years, the software industry has reached the conclusion that the central problem regarding software quality and major software project failures is one of inadequate management. This annex provides some guidelines to the applicant in terms of planning (including cost and timescale estimation), management of the project, and the quality of the software deliverables. If a proposal is asking for public funding to develop a system, then a reasonable expectation of the application is to provide enough visibility to be assured that:

- The stated goal is to produce software that will be deployed and maintained as a semi-commercial product.
- There is an understood set of project objectives, sufficient to determine a reliable project cost.
- There is an understood development process with identified points for management review, using a methodology that provides some level of control and design evolution.
- There is an understanding of the project cost and its profile throughout the project.

A minimum requirement for any software development project should be:

- Identify a lifecycle model that will be used as a basis for the management of the project
- Identify the top-level requirements of the project
- Identify the deliverables of the project
- Identify the key lifecycle milestones of the project and their products (including documentation and the availability of any prototypes) and understood success criteria

The proposal need not necessarily identify all of the above, but should provide enough detail and justification to present a convincing case that the development process is understood. Included in the proposal, a software development plan is required for all software-related projects. The detail and size of the plan should reflect its relevance in the project. Where software development is a minor part of the project, the plan need not be extensive. However, if it is critical to the success of the project and/or takes up a significant portion of the project time, then the detail should reflect this fact. The plan should be included within the six-page case for support (and not submitted as a separate document), addressing the project management requirements including the key milestones. The milestones should have nominal dates assigned to them.

In addition to the development plan, there should be evidence of a cost estimation process and allocation of sufficient resources (including staff). If there is not enough visibility to this cost estimation, then it will be assumed that it has not been done adequately and that the project is at risk of not reaching its objectives.

Risks
This should relate to the relative priorities of the project deliverables/functionality - if there are specific areas of high technical/project risk (to be identified), how are these to be managed?
If the project needs to be de-scoped to complete on schedule or within cost, what measures will be taken?

Please see website for link to the latest version of these notes. www.stfc.ac.uk/ips
The measures that will be taken to minimise cost/risk should be stated: e.g. use of COTS equipment or commercial software, software design tools, software development tools, change management tools, configuration management tools, requirements tracking tools, defect tracking tools.

Project Governance / Oversight

The governance and oversight arrangements should be stated if the project PI is not suitably qualified to oversee software development. Otherwise it will be assumed that the PI is responsible for this section of work.

Development approach Methodology

There should be an understood development process with identified points for management review, using a methodology that provides some level of control and design evolution. Examples of types of methodology include the “Waterfall” lifecycle model, a rapid prototyping / iterative or incremental delivery methodology.

Requirement analysis

The user needs should be clearly stated in the Case for Support and should encompass both functional requirements and non-functional requirements such as usability, resilience, performance and supportability.

The relative priorities of the project deliverables/functionality should be stated.

Design

The appropriate design activities should be stated, which may include conceptual, architectural, preliminary, or detailed design.

Testing approach/Quality Overview

The end product should be robust, practical and meet the needs of the users. Explain what measures will be taken to assure software quality: ideally a software development/quality plan. Again, such a plan does not have to be a large part of the Case for Support, but it does need to address how the project will assure that it will meet its design objectives, as represented by the requirements. The testing activities may include coding testing, unit module testing, subsystem testing, software/hardware testing, system integration testing and user acceptance testing.

Implementation / Deployment

The implementation activities, and any post-implementation and maintenance activities should be stated. Explain what software documentation should be produced – systems and user documentation.